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2·74 3502136

BEOCENTER 3500

BANG & OLUFSEN

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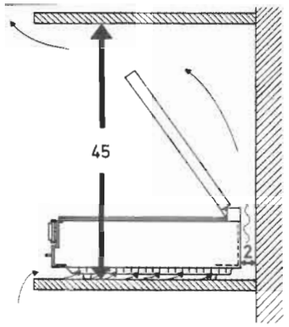


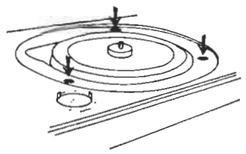
SETTING UP

Ventilation

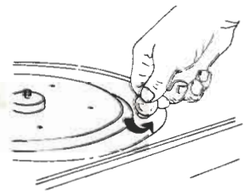
Because of its sleek styling, your BEOCENTER 3500 is equally suited for placement on some suitable piece of furniture or in a system of bookshelves.

Height between shelves should be at least 45 cm ($17^{3}/_{4}$ in.) to allow the lid to be opened.
A stereo amplifier generates a certain amount of heat, so ventilating apertures are provided in the base of the set. These should be accessible to allow air circulation. Furthermore, a clearance of not less than 2 cm ($1^{13}/_{16}$ in.) should be provided behind the set.
A built-in thermal cutout will automatically switch off the set if ventilation is inadequate and overheating occurs.
The set turns on automatically when the temperature has returned to normal.

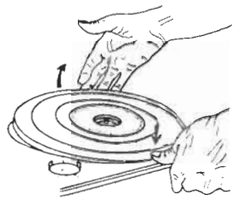
Transit Protection



Your BEOCENTER 3500 is secured in various ways against damage during transit.
The resilient suspension which carries the turntable and pickup arm is secured by three large screws. They should not be removed but merely turned anti-clockwise, using a coin etc., until they go against the stops.
The following components are not mounted in place during transit, being instead placed in the packing inserts:

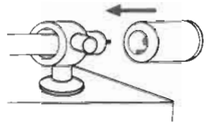


Turntable
Counterweight
Pickup cartridge
with protective cap
Dust cover.



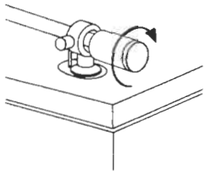
Turntable

After having turned the three screws anti-clockwise, simply place the turntable on top of the smaller under-turntable.
The easiest way to take off the turntable is to proceed as shown in the sketch. A slight pressure applied close to the front of the cabinet will tilt up the turntable on the opposite side.

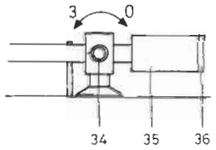


Counterweight and Pickup

The mounting of the counterweight and pickup cartridge, and the balancing of the pickup arm, should be carried out with great care. Undistorted reproduction and low record wear are directly dependent on correct balancing and correct stylus pressure. Accordingly, before applying power to your BEOCENTER 3500 proceed as follows:

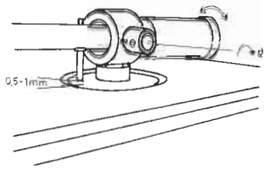


1. Slide the counterweight (35) in on the short portion of the pickup arm (note the cutout on the underside of the arm and a matching guide pin inside the counterweight). Then screw the counterweight's rotatable portion (36) approx. five turns clockwise.



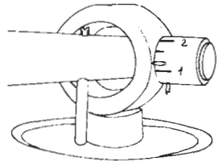
2. Turn the stylus pressure adjustment screw (34) to 0 grammes (ponds) by turning it clockwise against the stop.

3. Plug the pickup cartridge (32) into the socket on the pickup arm and press it home whilst holding the pickup arm firmly in order to avoid damaging the arm bearings. Remove the protective cap from the cartridge.



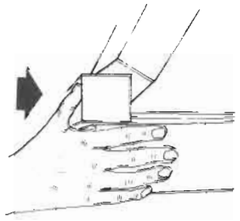
4. The pickup arm should now be capable of balancing so that the supporting leg can be made to "float" 0.5-1 mm above the surface below it (see sketch).
To adjust for exact balance turn the rotatable portion (36) of the counterweight either clockwise or anti-clockwise.

Be sure to do this with the protective cap removed from the pickup.

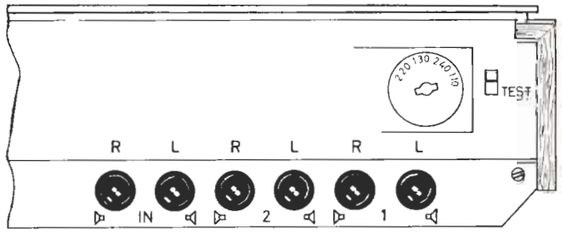


5. The pickup arm is now balanced. Thereafter turn the stylus-pressure adjustment screw (34) so that the desired stylus pressure is obtained.
Recommended stylus pressure is 1.2 grammes (pond).

Dust cover



To mount the dust cover, move it in over the rear edge of the top plate as shown in the sketch. The cover may be left closed during playing if desired.



EXTERNAL CONNECTIONS

Speakers

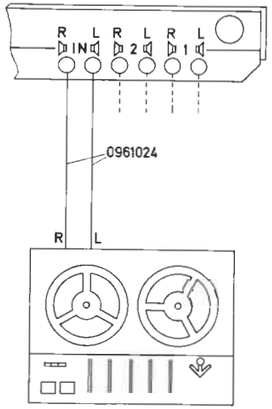
A pair of speakers should be plugged into the sockets marked 1 on the back of the set. The left speaker goes into the L socket and the right speaker into R.

Keep in mind that your BEOCENTER 3500 is capable of delivering 40 watts RMS per channel and 75 watts of music power per channel. Therefore only connect speakers of equivalent power-handling capability to your BEOCENTER 3500.

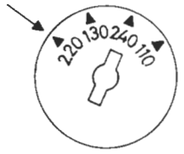
Extension Speakers

An additional pair of stereo speakers, for instance for use in another room, may be plugged into the sockets marked 2.
The BEOCENTER 3500 is designed for operation with speakers having an impedance of 4 ohms.

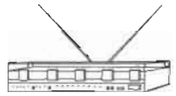
You may consequently connect a total of four speakers of 4 ohms each to your BEOCENTER 3500. If you wish to use additional speakers, they should be wired in a combination of series and parallel. Your dealer can assist you in choosing and installing your speakers.
Speakers that are already connected to another amplifier should not be connected to the BEOCENTER 3500.
This also applies to speakers using common wiring (common return lead).



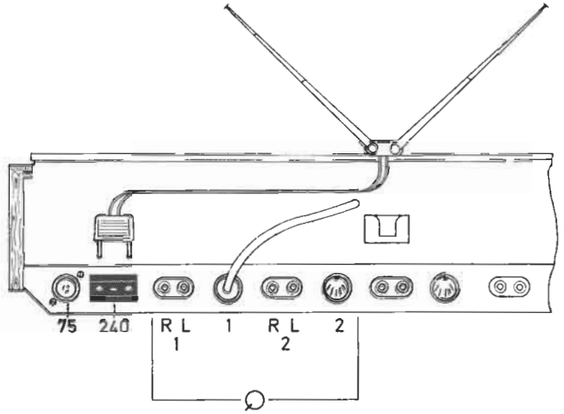
Speaker Input
The speakers connected to your BEOCENTER 3500 may be utilized for other equipment too, such as a tape recorder with a built-in output amplifier, without rearranging the speaker leads. A Type 0961024 adaptor cable (use two for stereo) should be inserted between the speaker sockets of the other instrument and the IN sockets of the BEOCENTER 3500 (see sketch on page 5).
Yoy may similarly provide a connection to the speaker socket of your TV set. If your TV set is fitted with an extension speaker socket and isolating transformer, it may be connected to the "speaker input" of the BEOCENTER 3500. In this case only one speaker, left or right, will provide TV sound, due to the fact that TV programmes are of the mono type.



Supply Voltage
The BEOCENTER 3500 is switchable between AC voltages of 110, 130, 220, and 240 volts, 50 Hz.
The switch is directly accessible on the back of the set.

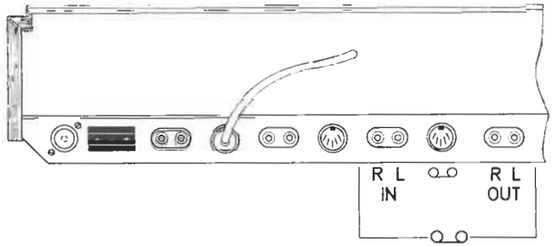


FM Aerial
The BEOCENTER 3500 has two different aerial sockets: A circular coaxial socket, DIN 45 325, for aerial systems using 60- to 75-ohm coaxial cable.
An FM Type IEC twin socket for aerial systems using balanced 240-to 300-ohm cable.
If you live in the immediate vicinity of an FM broadcasting station you may use a Type 2010 V-shaped telescopic aerial, which should be inserted in the holder on the back of the set.
The aerial plug goes into the 240-300-ohm socket.
Reception over longer distances requires a more efficient FM aerial system.
The V-aerial may then be turned down and concealed behind the set, and the plug should be removed from the aerial socket.
FM stereo reception in order to be noise-free requires a stronger signal than is necessary for mono reception (approx. 10 times stronger).

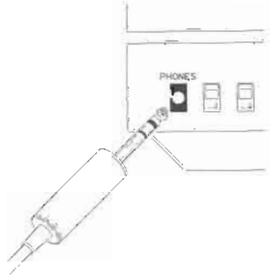


Record Player
1
The built-in record player connects to the socket marked 1, low impedance.

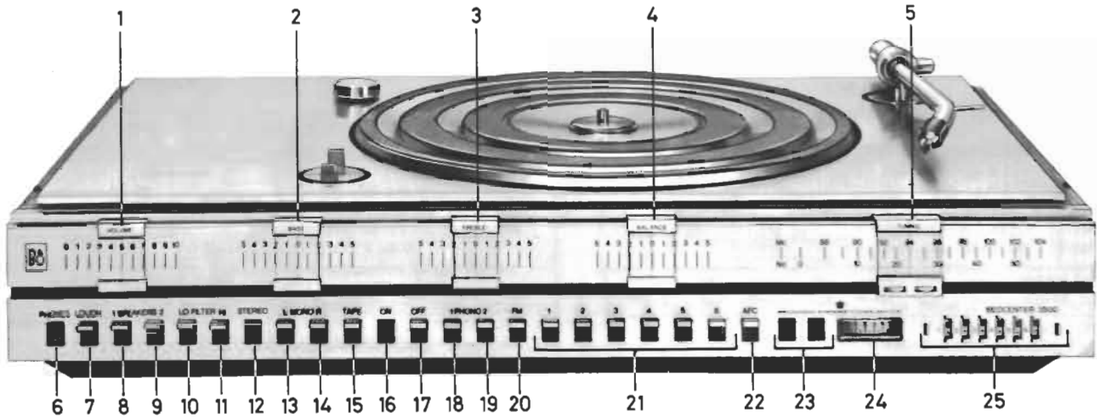
Additional Record Player
2
An additional record player, either low impedance with a built-in pre-amplifier, or with a high-impedance pickup, may be plugged into the socket marked 2, high impedance.



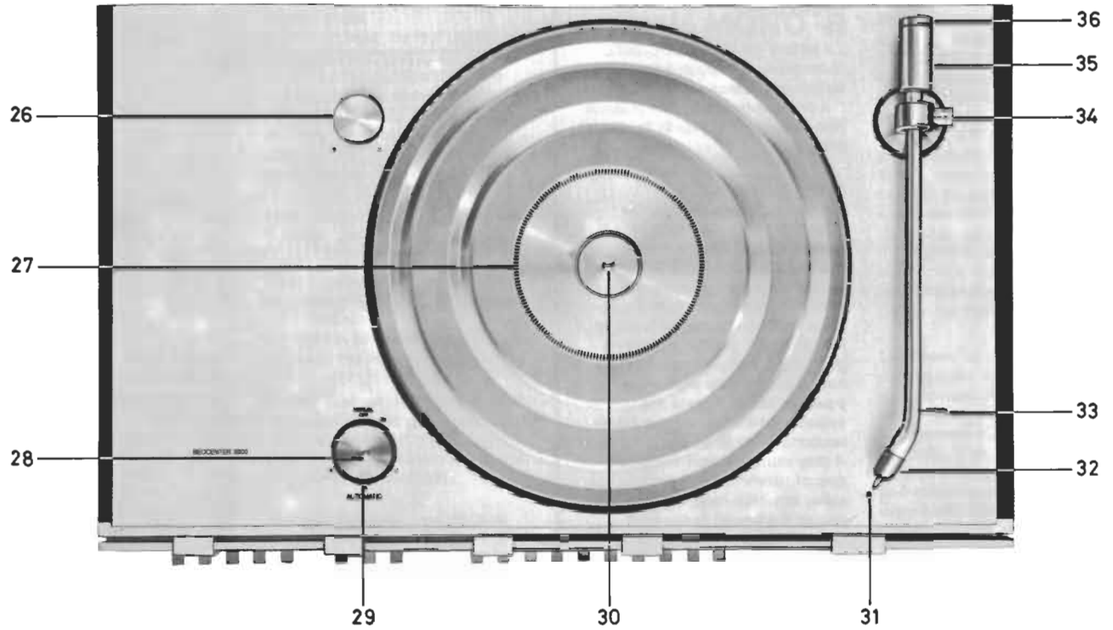
Tape Recorder Socket
This is a DIN socket for tape recorders, both stereo and mono models, with or without output amplifiers.
Using a 0961014 adaptor cable you can make recordings from both programme sources (FM and record player) and play tapes back through the amplifier section of your BEOCENTER 3500.
In addition to this, a 6270019 adaptor cable permits off-the-tape monitoring of recordings. instead of tape recorders with standard DIN sockets, tape recorders with American standard sockets may be connected to your BEOCENTER 3500. The OUT sockets are for recording; those marked IN are for playback.



Headphone Socket. This socket is located on the front panel of the BEOCENTER 3500. It is intended for headphones equipped with a jack plug (impedance between 500 and 10.000 ohms).
A suitable B&O jack plug carries the type no. 7222022.



1	VOLUME	Volume control
2	BASS	Bass control
3	TREBLE	Treble control
4	BALANCE	Balance control
5	TUNING	Slide pointer for FM tuning
6	PHONES	Headphone socket
7	LOUDN	Loudness control
8	SPEAKERS 1	Speaker pair 1
9	SPEAKERS 2	Speaker pair 2
10	FILTER LO	Rumble or bass filter
11	FILTER HI	Scratch or treble filter
12	STEREO	Indicator light for stereo reproduction
13	MONO L	Stereo/mono switch - left channel
14	MONO R	Stereo/mono switch - right channel
15	TAPE	Tape recorder playback
16	ON	Indicator light for mains switch
17	OFF	Mains switch
18	PHONO 1	Record player
19	PHONO 2	Additional record player
20	FM	FM band
21	PROGRAM 1 - 6	6 pretuned FM stations
22	AFC	FM automatic frequency control
23	TUNING INDICATOR	Tuning aid indicator light
24	TUNING METER	Signal level meter
25	PROGRAM 1 - 6	Pretuning of FM stations

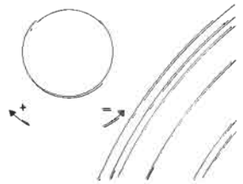


26	Vernier speed adjustment
27	Turntable with stroboscopic disc
28	LIFT button
29	Selector
30	Adaptor for large centre hole
31	Indicator light
32	Pickup cartridge
33	Grip
34	Stylus pressure adjustment
35	Counterweight
36	Counterweight adjustment

OPERATION

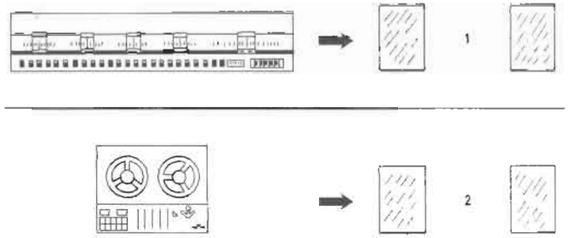
OFF **To switch off** your BEOCENTER 3500, **press** this push-button. The button will release when one of the programme selection buttons (for example PHONO 1) is pressed.

Speed Adjustment
Vernier adjustment of motor speed is performed with an adjustment knob on the top side of the BEOCENTER 3500 while simultaneously watching the stroboscopic scale on the turntable. With the selector knob at MANUAL ON and no record placed on the turntable, illuminate the turntable with a mains-powered lamp. Rotate the adjustment knob until the black sections seem to be standing still. If they move against the direction of rotation, the speed is too slow, in which case the knob should be turned towards +. Conversely, if the sections are moving in the direction of rotation, the speed is too fast, and the knob should be turned towards –.



SPEAKERS 1 **Speaker Pair 2.** Pressing this button will connect the extension speaker pair.
To release the buttons, press them a second time.

SPEAKERS 2 **Speaker Pair 1.** Pressing this button will connect one speaker pair.



IN **Speaker Input.** With both buttons **released, both speaker** pairs are disconnected from the BEOCENTER 3500 and may instead be used with, for example, a tape recorder which has a built-in output amplifier and is plugged into the IN sockets.
Your BEOCENTER 3500 does not have to be switched on while its speakers are operated with other equipment.
You can also form combinations of two programmes, for example: With button 1 depressed and button 2 released you will receive the BEOCENTER 3500 programme, FM or record, via speaker pair 1 whilst the tape recorder will play back via speaker pair 2. The tape recorder's volume and tone controls should be operated in the usual manner just as if speakers were plugged directly into its own speaker sockets.

PHONES **Headphones**
A pair of headphones connected to the set will function independently of the pushbuttons controlling the two speaker pairs, SPEAKERS 1 and SPEAKERS 2. All other controls (including alignment controls) will function when you use headphones.

VOLUME **Volume Control.** With 0-10 scale, controls amplifier output power.

BASS **Bass Control.** With this control at mid-scale you get linear deep-note response. Moving it to right or left will accentuate or reduce the bass response, respectively.

TREBLE **Treble Control.** With this control at mid-scale you get linear high-note response. Moving it to right or left will accentutate or reduce the treble, respectively.

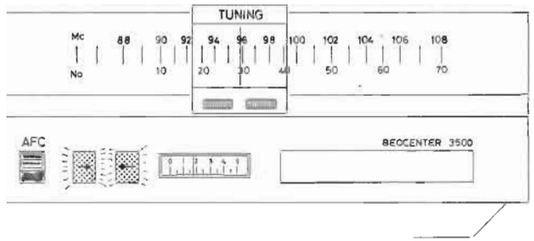
BALANCE **Balance Control.** This control adjusts the differential gain of the two channels. Moving it to the right will reduce the volume in the left speaker. Similarly, the right channel will be attenuated when the balance control is moved towards the left.

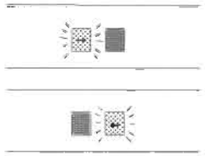
L MONO R **Stereo/Mono Switch.** With both these buttons released, your BEOCENTER 3500 will operate as a stereo amplifier, and the green STEREO indicator will light up (during FM reception the indicator will be on only during stereo programmes).
With L depressed, the left channel will be heard through both speakers. With R depressed, the right channel will be heard through both speakers. When both L and R are depressed, the two channels are connected together for mono reproduction.

LOUDN **Loudness.** With this button depressed you will obtain more life-like reproduction at low volume levels, due to the physiologically compensated circuit which it controls. This means that at volume settings below 4 the bass and treble ranges will automatically be accentuated relative to the mid-range frequencies.
This effect is not present at settings above 4.

FILTER LO **Rumble or Bass Filter.** Provides heavy deep-note cutoff.

FILTER HI **Scratch or Treble Filter.** Provides heavy high-frequency cutoff.

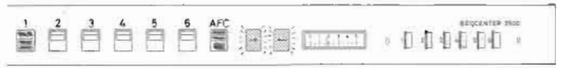


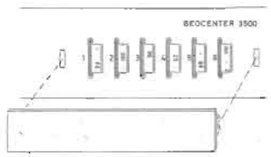


FM TUNING
To tune the FM band, press the FM button. The FM tuning mechanism will now be operative.
Set the slide pointer to the station of your choice, using the two thumb wheels for fine tuning.
While you are tuning to an FM station, the two red lights in the tuning indicator will function as follows:
If you move the slide pointer in a direction from left to right in tuning in the station, the left indicator will show light first, followed by the one at the right.
Similarly, when tuning from right to left, the right indicator will show light first, followed by the one at the left.
The correct setting is the one at which the two lights are of equal brightness.
The meter reading will then be a measure of the field strength of the incoming signal.

AFC

Automatic Frequency Control.
This button is used to lock the frequency of the FM station you have tuned in. Do not press the AFC button until after you have tuned in your FM station as described above.





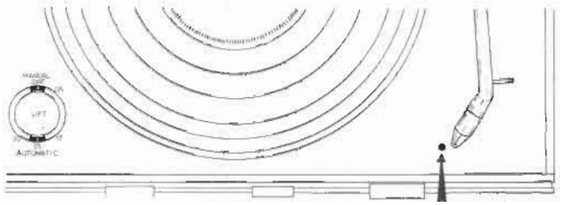
Pre-tuning
FM Stations
With pushbuttons 1 to 6 you can arrange for rapid switching between your favourite FM programmes.
These can be pre-tuned with the associated vertical knobs 1 to 6, which have frequency scales.

Example: Press pushbutton 1. The AFC button should be released. Tune in a programme with knob 1. The tuning indicator and meter will function as described under FM TUNING above Thereafter similarly tune the other pushbuttons, 2 to 6, to the other programmes.
Now press the AFC button, and the FM automatic control circuit will keep the stations accurately in tune.

Stereo
Reception
When you tune to an FM station that is transmitting a stereo programme, the STEREO indicator will show green light.
If the station changes over to mono, or if you thereafter tune in a mono programme, the BEOCENTER 3500 will automatically switch to mono, and the indicator lamp will go out.
If your FM stereo reception suffers interference from hiss and noise that disappear when you depress the MONO L and R buttons it is an indication that the signal from your FM aerial is not sufficiently strong.

PHONO 1

To switch on the record player, press the PHONO 1 button. The record player itself is very easy to operate because all functions are controlled by a central knob.



AUTOMATIC

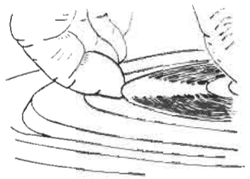
The rotatable portion of the knob selects record size and speed.

MANUAL

With the knob set at MANUAL ON, the turntable will operate at 33⅓.

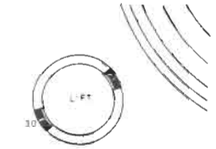
LIFT

The LIFT pushbutton starts the motor and the automatic pickup control mechanism. This button is also used as pause control and for restarting.
The red pilot lamp is on while the automatic mechanism is operative (see arrow in sketch above).



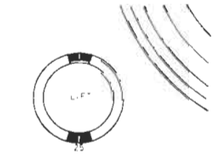
Turntable
It is easy to put on and remove records because the turntable has finger grooves, for both 17 and 25 cm.

Wiping Records
The MANUAL ON position is also suitable when you want to wipe dust off your records before use because you avoid the automatic movement of the pickup arm.



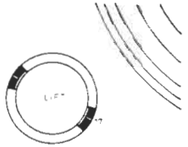
Automatic Playing
30 cm. Put on a record and turn the selector to the 30 position. The speed will then be 33⅓ r. p. m. Start the motor by pressing the LIFT button. The pickup will automatically move into position and lower in the starting groove on the record.

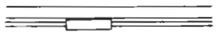
When the record has finished, the pickup will automatically rise and travel out to its position of rest, and the motor will stop.



25 cm. Put on a record and turn the selector to the 25 position. The speed will then be 33⅓ r. p. m. Start the motor by pressing the LIFT button. The pickup will automatically move into position and lower into the starting groove on the record.

When the record has finished, the pickup will automatically rise and travel out to its position of rest, and the motor will stop.





17 cm. Put on a record and turn the selector to the 17 position. The speed will then be 45 r.p.m. Start the motor by pressing the LIFT button. The pickup will automatically move into position and lower into the starting groove on the record.

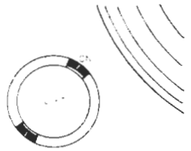
When the record has finished, the pickup will automatically rise and travel out to its position of rest, and the motor will stop.

Special Records
17 cm, 33⅓ r.p.m. These records require somewhat different operation. Set the selector to 30. Now you have to lift the pickup arm and move it in above the starting groove on the record. Start the motor by pressing the LIFT button. The pickup will now automatically lower on to the record.

When the record has finished, the pickup will automatically rise and travel out to its position of rest, and the motor will stop.

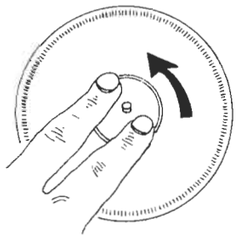
Pause
If you wish to make a pause, brief or long, while playing a record just press the LIFT button. The pickup will rise without travelling out, and the motor will stop.

When you press the LIFT button again, the motor will start again and the pickup will lower into the same groove.
A pilot lamp will be on as long as the automatic mechanism is in operation, during which time the record player will not respond to attempts to operate the LIFT button.



Stop Before End of Record
Press the LIFT button. The pickup will rise, and the motor stops. You may now move the pickup arm out manually, and your BEOCENTER 3500 is ready to start from the beginning of the same record, or you may put on another record.

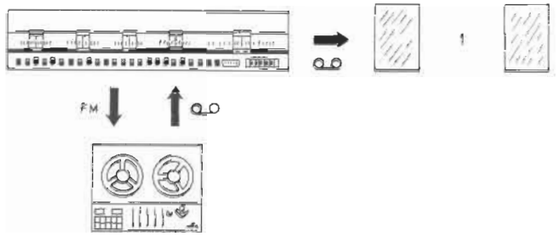
MANUAL
With the selector in the MANUAL ON position the motor will start, 33⅓ r.p.m., without moving the pickup. You may now move the pickup manually to the section of the record you wish to hear, and the pickup will lower when you press the LIFT button.
When the record has finished, the pickup will rise automatically and travel out, but the turntable will continue to rotate until you turn the selector knob to MANUAL OFF.
You can also introduce a pause with the selector in the MANUAL ON position:
When you press the LIFT button, the pickup will rise, and when you press the button again, the pickup will lower while the turntable continues to rotate.



Records with Large Centre Holes
To play records with large centre holes, just press the central portion of the turntable while turning it anti-clockwise. A built-in spring will then lift the central portion.
When you thereafter wish to play records with small holes, press down and turn clockwise.

PHONO 2 With this button depressed you can play records from an additional record player, which should be plugged into socket 2.

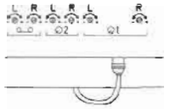
TAPE With this button depressed you can play back tapes from a recorder connected to your BEOCENTER 3500.
The TAPE button should not normally be depressed while making tape recordings from FM or PHONO.



TAPE
Off-the-tape Monitoring
When operating your BEOCENTER 3500 with a tape recorder which has provision for off-the-tape monitoring while recording, you should press both the TAPE button and the button controlling the desired programme source (FM or PHONO). You will then be able to monitor your tape recordings while making them, with only the time delay resulting from the travel of the tape from record head to playback head.
To release the TAPE button, press one of the other programmecontrolling buttons – also even if that button is already depressed.

ADJUSTMENT OF INPUT LEVELS

Your BEOCENTER 3500 comes to you adjusted so that there is no difference in volume level when you switch between FM, record player, external tape recorder, and extra record player. Adjustment was made with BEOCORD and BEOGRAM models connected to your BEOCENTER 3500. If you wish to connect other types of tape recorders and record player of a different output signal level, you can make the required readjustment yourself.



In the base plate of your BEOCENTER 3500 are threes sets of level controls which become accessible when the set is turned upside down. The arm should be "anchored" or rendered immobile when the set is turned upside down. Both left and right channels are adjustable. Use the enclosed small screwdriver of insulating material for adjustment.

FM

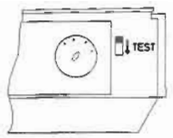
The volume level of the FM range serves as a starting point or reference, so you should begin by turning to an FM mono programme. Connect and switch on a pair of stereo speakers – or you may use headphones. Set the BALANCE control at 0. The MONO L and R buttons should be released. Then set the VOLUME control to the speaker or headphone level you wish to use for general listening.

TAPE

Now press the TAPE button and play back a mono recording from your tape recorder.

L ⌀0 R

Using the small screwdriver, adjust both L and R until you obtain the same volume as for FM programmes.



TEST Knob
Now adjust for correct balance by means of the TEST knob, located on the back of the set. Move the TEST knob downwards and thereafter carefully adjust the R control for minimum volume.
Move the TEST knob upwards. The TAPE input is now correctly adjusted for both volume level and balance.
You can make a check by switching back and forth between TAPE and FM a few times.

L ⌀2 R

To adjust the PHONO 2 level (record player with pre-amplifier or with high-impedance pickup), proceed in the same manner. In this case, too, you should use mono reproduction – not a stereo record – while adjusting L and R in the base of the set. Adjust L and R to the same volume as on FM; then move the TEST knob downwards and carefully adjust R for minimum volume. Move the TEST knob upwards.

L ⌀1 R

You can similarly adjust level and balance for the built-in record player, while playing a mono record. You must then return your BEOCENTER 3500 to horizontal and turn it so that it projects over the edge of the table, permitting operation of the control from below.

Adjust L and R to the same volume as when listening to an FM programme. Move the TEST knob downwards and carefully adjust R for minimum volume. Again move the TEST knob upwards.

NOTE: The TEST knob should be in its topmost position during normal operation of the BEOCENTER 3500 and is therefore placed so that you cannot by mistake operate your set incorrectly.

ADDITIONAL INFORMATION

Incorrect Operation
The record player of your BEOCENTER 3500 will suffer no damage should you unintentionally operate the controls while the automatic mechanism is working and the red lamp is on. This may cause the motor to stop, but the motor will function normally when you start "all over again". Do not obstruct the movements of the pickup arm while it is under automatic control and the red lamp is on.
While the stylus is on the record, and also while the arm is lifted and the light is off, you can move the pickup arm by means of the finger grip without risk, inside the area through which the arm will normally travel when under automatic control.

Dust Removal
Always dust your records before use with one of the antistatic aids which are commercially available.
The diamond may be cleaned of dust if care is taken, using a soft brush etc.

Replacing the Stylus Assembly
If the stylus assembly has suffered damage and requires replacement, the pickup cartridge should be unplugged from the arm. Hold the pickup arm firmly while pulling to avoid damaging the arm bearings.

Loosen the screw on the under side of the cartridge. The complete stylus assembly can now be taken off and replaced with a new one (type 905429). When mounting the new stylus assembly take care to press it home before tightening the screw.

NOTE
Your BEOCENTER 3500 is only guaranteed to deliver optimum performance and meet its specification if a genuine B&O stylus assembly is used. Therefore beware of imitations; use only genuine B&O stylus assemblies for replacement.

Original B&O stylus assemblies are only delivered in closed packings as shown on this sketch.

Elliptical Diamond
As supplied to you, your BEOCENTER 3500 is equipped with an SP 10 A pickup, type No. 8905425, which uses a 15-micron spherical naked diamond.
A separately available accessory is the SP 12 A pickup, type No. 8905427, which features the same high-compliance stylus suspension and stylus pressure as the SP 10 A but uses a 5×17 micron elliptical naked diamond. The SP 12 A will give you minimum distortion in the treble range and accurate tracking of even the most exacting recordings.
The stylus assembly for the SP 12 A carries the type no. 8905430.

Checking the Stylus Pressure
After replacement of the pick-up cartridge or stylus assembly it is advisable to check the stylus pressure and, if necessary, readjust the counterweight as described on page 2.

Wiping the Dust Cover
The dust cover will gradually build up a static charge if wiped repeatedly with a dry cloth.
To avoid this, occasionally use synthetic detergent for wiping.

TECHNICAL DATA

Subject to change without notice

Motor			DIN 45 500 Requirements	BEOCENTER 3500 type 2401
Wow and Flutter	DIN 45 500, Page 3		< ± 0.15 %	< ± 0.15 %
	RMS			< ± 0,075 %
Rumble	DIN 45 500, Page 3	A B	> 35 dB > 55 dB	> 37 dB > 60 dB
Speed Control Range				> 6 %
Frequency Response	DIN 45 500, Page 3	± 5 dB ± 2 dB	40 - 12,500 Hz ± 5 dB 63.5 - 8,000 Hz ± 2 dB	20 - 25,000 ± 3 dB 50 - 16,000 ± 2.5 dB
Channel Separation	DIN 45 500, Page 3	1000 Hz 500 - 6300 Hz	≧ 20 dB ≧ 15 dB	> 25 dB > 20 dB
Channel Matching	DIN 45 500, Page 3		≦ 2 dB	< 2 dB
Intermodulation	DIN 45 500, Page 3		< 1 %	< 1 %
Compliance	Stated value X 10^{-6} cm/dyn.		> 4	25
Stylus			Spherical: 15 µ ± 5 µ	Spherical naked diamond 15 µ
Recommended, Stylus Pressure			< 5 gram	1.2 gram
Stylus Pressure Range				0 - 3.5 gram
Replacement Stylus Assembly				8905429
Pickup-arm System				Ball bearing
Pickup Cartridge				SP 10 A
Automatic Pickup-movement Control				Yes
Automatic Speed Selection				Yes
Motor				Asynchronous

Other Data				
Power Supply		AC Frequency Power consumption		110, 130, 220, 240 volts 50 Hz 20 - 200 watts
Dimensions	H X W X D			14,5 X 58 X 35 cm
Weight				18 kg

Amplifier	Measured with bass and treble set for linear response		DIN 45 500 Requirements, page 6, ampl.	BEOCENTER 3500 type 2401
Power Output	1000 Hz, at specified distortion (see Harmonic Distortion)	RMS Music	2 X 6 watts None	2 X 40 watts/4 ohms 2 X 30 watts/8 ohms 2 X 75 watts/ 4 ohms 2 X 40 watts/8 ohms
Speaker Impedance	Nominal		4 or 8 ohms	4 ohms
Harmonic Distortion	DIN 45 500 at 50 mW output 1000 Hz			< 0.3 %
	DIN 45 500 at rated output 1000 Hz		≦ 1 %	< 0.5 %
Intermodulation	DIN 45 500, page 6		≦ 3 %	< 0.6 %
Frequency Response	DIN 45 500, ± 1.5 dB		40 - 16,000 Hz	30 - 30,000 Hz
Power Bandwidth	DIN 45 500, 1 % distortion		40 - 12,500 Hz	20 - 30,000 Hz
Damping Factor	DIN 45 500, 1000 Hz		≧ 3	> 15
Inputs	Sensitivity at specified output, 1000 Hz	Pickup low impedance Tape recorder	≦ 5 mV/≧ 47 kohm ≦ 500 mV/≧ 470 kohm	3 mV/47 kohm 250 mV/1000 kohm
Signal-to-noise ratio	At specified output, linear measurement	Pickup low impedance Tape recorder	None	> 60 dB > 60 dB
Channel Separation	DIN 45 500 Between channels all inputs	1000 Hz and 250 - 10,000 Hz	≧ 40 dB ≦ 30 dB	> 45 dB > 35 dB
Outputs	DIN 45 500 Signal voltage at specified input voltage, 1000 Hz	Tape recorder	0.1 - 2 mV per 1 kohm load impedance (1 - 50 kohm)	15 mV at 4.7 kohm output impedance
Bass Control	Measured at 40 Hz		None	± 17 dB
Treble Control	Measured at 12,500 Hz		None	± 14 dB

FM Tuner	Measured at 94 MHz, modulation, 1000 Hz			
Range			None	87.5 - 104 MHz
Sensitivity	26 dB signal-to-noise ratio deviation 40 kHz		None	< 1.4 µV at 75 ohms
Signal-to-noise Ratio	DIN 45 500, page 2		≧ 54 dB	> 65 dB
Frequency Range	DIN 45 500 ± 1.5 dB, pre-emphasis 50 µS		50 - 6,500 Hz	20 - 15,000 Hz
Harmonic Distortion	DIN 45 500		≦ 2 %	< 0.4 %
Channel Separation	DIN 45 500, page 2, measured at 1000 Hz, 40 kHz		≧ 26 dB	> 35 dB
Pilot and Carrier Suppression	DIN 45 500, page 2	19 kHz 38 kHz	≧ 20 dB ≦ 30 dB	> 40 dB > 40 dB